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09/780,617	02/12/2001	Hiroaki Kaneko	040302/0259	9112

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EXAMINER

TSANG FOSTER, SUSY N

ART UNIT

PAPER NUMBER

1745

DATE MAILED: 12/19/2002

9

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/780,617

Applicant(s)

KANEKO ET AL.

Examiner

Susy N Tsang-Foster

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-11 is/are pending in the application.
- 4a) Of the above claim(s) 5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6, 7 and 9-11 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of claims 1-3 and 6-11 and the election of species La for A', of species Pr for A'', of species Fe for B', and of species Rh for B'' in Paper No. 8 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Claim 1 was amended and claim 4 was cancelled in Paper No. 8.

2. Claim 5 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 8.

### ***Priority***

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

4. The information disclosure statement filed on 2/12/2001 has been considered by the Examiner.

***Drawings***

5. The drawings are objected to because Tables 1-4 are not conventionally considered as drawings and should be deleted as Figures. New separate sheets for Tables 1-4 should be added to the end of the specification. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Specification***

6. The disclosure is objected to because of the following informalities: Tables 1-4 should not be referred to as Figures 6-9 because these tables are not figures. These Tables are considered part of the specification and should be labeled as Tables 1-4 and included as separate sheets at the end of the specification. The brief descriptions for Figures 6-9 should be deleted from the specification.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 63-302950 A2 (CAPLUS abstract 1989).

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The CAPLUS abstract for JP 63-302950 A discloses a catalyst composition that is a perovskite oxide of the general formula  $A_{1-x}A'_x B_{1-y}B'_y O_3$  where A is a rare earth metal, A' is at least one of Ce, Pr, Sm, Eu, Sc, Bi, Pb, Ca, Sr, and Ba; B is at least one of Fe, Zn, Sn, Mg, Co, Ni, Ti, Nb, V, Cu, and Mn; B' is at least one of Pt, Rh, Pd, Ru and Ir; and x is 0.1-0.9; y is 0-0.9.

Examples with La as A are disclosed. Specifically, some of the examples disclosed are  $La_{0.8}Pr_{0.2}Fe_{0.95}Ru_{0.05}O_3$  (see page 7, column 2), and  $La_{0.8}Pr_{0.2}Fe_{0.95}Pd_{0.05}O_3$  (page 7, column 2). It is clear from the general formula that the subscript for La can be from 0.1 to 0.9, the subscripts for Pr can be from 0.1 to 0.9, the subscripts for Fe can be from 0.1 to 1 and the subscript for Ru can be from 0 to 0.9. The general formula also discloses that Ru can also be Rh instead. Thus, the general formula given for the catalyst composition in the CAPLUS abstract 1989 for the JP 63-302950 A and the examples of specific catalyst compositions in the JP 63-302950 A anticipate the claims.

***Claim Rejections - 35 USC § 102***

9. Claims 1 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 97/42495.

It is noted a preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). In claim 1, the intended use of electrode catalyst for a fuel cell is not given patentable weight.

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WO 97/42495 discloses a gas sensor comprising a gas sensor having a semiconductor electrode that is made of  $(\text{La}_{0.8}\text{Sr}_{0.2})(\text{Co}_{0.9}\text{Ru}_{0.1})\text{O}_3$  (see abstract and page 12, lines 4-10).

10. Claims 1, 2, and 9 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Hart (US 4,321,250).

See abstract; col. 1, lines 10-35; col. 2, lines 15-31; col. 3, lines 15-20; col. 4, line 40 to col. 5, line 18 of the Hart reference.

11. Claim 1, 2, 6, and 9 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Lauder (US 4,126,580).

See abstract; col. 4, lines 34-40; col. 5, lines 44-68; col. 6, lines 33-63; col. 10, lines 7-43; Example O of Table 1 of the Lauder reference.

### ***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 1, and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Negishi (US 6,165,633) in view of Lauder (US 4,126,580).

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Negishi discloses a fuel cell system comprises the methanol reforming apparatus, a fuel cell, pipings for supplying a gas reformed by the reforming apparatus to the fuel cell, and pipings for supplying a gas containing oxygen to the fuel cell (See Figure 1). The methanol reforming apparatus comprises a fuel gas supply source, an oxygen supply source, a steam supply source, and pipings for supplying a fuel gas, an oxygen, and a steam supplied from respective supply sources to the reformer (see Figure 1).

Negishi does not disclose that the catalyst in the reformer is given by the general formula recited in instant claim 1.

Lauder teaches a reformer utilizing perovskite catalysts of the general formula  $ABO_3$  (see abstract) and specifically  $[Sr_{0.2}La_{0.8}][Co_{0.9}Ru_{0.1}]O_3$  (see table 1, col. 11), that these catalysts are stable and durable at high temperatures (col. , lines 44-46), and that the catalysts can be used to steam reform hydrocarbons (col. 6, lines 34-50).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use  $[Sr_{0.2}La_{0.8}][Co_{0.9}Ru_{0.1}]O_3$  in the reformer of Negishi because  $[Sr_{0.2}La_{0.8}][Co_{0.9}Ru_{0.1}]O_3$  is stable and durable at high temperatures during the reforming process as taught by Lauder.

#### ***Allowable Subject Matter***

14. Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. The following is a statement of reasons for the indication of allowable subject matter:

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The present invention claims a fuel cell comprising a solid electrolyte substrate; an electrode catalyst adhered onto one surface of the solid electrolyte substrate and having the catalyst composition set forth in instant claim 1 and an air electrode adhered onto the other surface of the solid electrolyte substrate.

The closest prior art of record, Kawasaki et al (US 5,964,991) discloses that the main raw component for the anode is preferably a perovskite type complex oxide containing lanthanum, more preferably lanthanum manganite or lanthanum cobaltite, most preferably lanthanum manganite and that the lanthanum chromite and lanthanum manganite may be doped with strontium, calcium or chromium (in the case of lanthanum chromite) or cobalt, iron, nickel, aluminum or the like (col. 7, lines 50-58) but Kawasaki et al. does not disclose, teach, or suggest that the anode of the fuel cell comprises a perovskite type complex oxide given by the formula of instant claim 1.

### ***Conclusion***

16. Any inquiry concerning this communication or earlier communications should be directed to examiner Susy Tsang-Foster, Ph.D. whose telephone number is (703) 305-0588. The examiner can normally be reached on Monday through Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at (703) 308-2383. The phone number for the organization where this application or proceeding is assigned is (703) 305-5900.



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The fax phone numbers for the organization where this application or proceeding is assigned is (703) 872-9310 for regular communications and (703) 872-9311 for After-Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

st/14 December 2002

*Suey Lang-Foster*